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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,291	08/04/2006	Yit-Shun Leung Ki	2590-161	8675
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NIXON & VANDERHYE, PC			EXAMINER	
901 NORTH GLEBE ROAD, 11TH FLOOR			GEORGE, PATRICIA ANN	
ARLINGTON, VA 22203			ART UNIT	PAPER NUMBER
			1792	
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			11/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/588,291	LEUNG KI, YIT-SHUN	
	Examiner Patricia A. George	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 November 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 8/4/2006.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "bulk" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). For the sake of examination the term "bulk substrate" will be interpreted as --- substrate material ---.

Regarding claim 1, the phrase "successive" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). For the sake of examination the term "successive" will be interpreted as --- followed by another step" ---.

Regarding claim 1, the phrase "use of an origination shim" renders the claim indefinite because the claim does not state how the shim was used. See MPEP § 2173.05(q).

Regarding claims 8-11, the phrase "can be" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed

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invention. See MPEP § 2173.05(d). For the sake of examination the term "can be" will be interpreted as - - - optionally - - -.

Claim 20 recites the limitation "the marking " in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because it is failing to be a proper process claim. See MPEP § 2173.05(q).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by McGrew (5,521,030).

McGrew teaches it is known to use methods of embossing (as in claim 15) to replicate a holographic relief pattern (i.e. an optically variable transitory image relief pattern, commonly known as OVD,(as in claim 13), characterized by use of a master die (i.e. origination shim, as in claim 7) fabricated through use of photolithography to create

a patterned etch-mask layer (i.e. raised or depressed portions, as in claim 14) to etch the substrate (i.e. bulk substrate ) of the origination shim (i.e. a through a micromachining process involving successive steps). See Background. McGrew also teaches use methods of hot-stamping (col. 6, 31+).

***Claim Rejections - 35 USC § 103***

Claims 2, 3, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew (5,521,030), as applied to claims 1, 7, and 13-15 above, in view of Morales et al (6,749,997), and evidenced by Watrous (4,092,611), Lercel (6,635,398), and by Meyer (2,409,119).

McGrew teaches it is known that a related process is used with a silicon substrate, as in claim 2, and use of RIE, as in claim 3. See abstract.

McGrew fails to teach wet etching silicon, as in claim 2.

With respect to claim 2, Morales teaches it is known to use wet etch for silicon etching.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of replicating an OVD patter, as McGrew, by including a step of wet etching the silicon, as applicants' claim, because Morales teaches wet etching silicon is known to be effective, and use of methods known to effective are cost saving.

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As to the silicon being single crystal (i.e. monocrystalline) of a specific orientation, as in claims 2 and 3, the modified invention of McGrew is silent with regard to use of a single crystalline silicon plane 100 or 111.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of replicating an OVD patter with etching, as McGrew, by include use of any single crystalline silicon plane, including applicants' specifically claimed 100 or 111, because of the benefit of preferencial etching (wet or RIE as evidenced by Lercel – see background) occurs in a lateral plane, as evidenced by Watrous. See Watrous's Background section.

The modified invention of McGrew teaches it is effective to form a nickel shim from the silicon master. See Morelas col. 8.

McGrew is silent as to the method of deposition, or use of successive steps of electroforming, as in claim 6.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to use any method of forming of the nickel, including applicants' specifically claimed electroforming because one skilled in the art would find it obvious to attempt any method known to be effective for forming nickel, and electroforming nickel is known (evidenced by Meyer of 2,409,119 – see title).

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to use any number of electroforming steps, including applicants' claimed successive steps, when using the method of replication as McGrew, because

mere duplication has no patentable significance unless a new and unexpected result is produced.

***Claim Rejections - 35 USC § 103***

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew (5,521,030), as applied to claims 1, 7, and 13-15 above, in view of Hibino (6,119,485).

McGrew fails to teach specific materials of substrate, as applicants' limitations of claims 4 and 5.

Hibino teaches it is known to be effective to use silicon dioxide as a main component, and that it consists of metal. See Summary, col. 4.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of replicating an OVD pattern with etching, as McGrew, by including the use of a substrate mainly of silicon dioxide, as in claim 4, and comprising metal, as in claim 5, because Hibino teaches such substrate materials are known to be effective, and use of methods known to effective are cost saving.

***Claim Rejections - 35 USC § 103***

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew, as applied to claims 1, 7, and 13-15 above, in view of Morales et al and Kato (5,187,597), evidenced by GlaxoSmithKline (ChennaiOnline Cityscape; 2/26/2003; <http://chennaionline.com/cityfeature/newlaunches/crocin.asp>)

McGrew fails to teach the structural properties of the shim as in claims 8-10.

As to claims 8-10, Kato teaches front and back images display different images, as in claims 8-11. See Summary.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of a shim, as McGrew, to include the structural properties as applicants' limitations in claims 8-10, because Kato teaches such structural properties are known to be effective, and use of structures known to be effective are cost saving.

Further GlaxoSmithKline provides evidence that holograms having features like flip-flop, kinetic effect, 2D+3D effect and micro-text, which makes it very difficult for spurious manufacturers to duplicate.

If examiner selected the option of not replicating when rotated through a 90 degree at a fixed viewing angle offset, as in claim 8; not replicated such that the foreground image relief pattern is hidden by the background relief pattern, when the replicated image is tilted away from the observer, as in claim 9; and not replicating such that the foreground, non-apparent when viewed perpendicular to the plane of the image replica, appears against the background of the relief pattern, when the replicated image is tilted away from the observer, as in claim 10.

IF examiner did not select the option above, it would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of invention of replicating an OVD pattern with etching, as McGrew, by include the use of features like flip-flop, kinetic effect, and 2D as applicants' features in claims 8-10,

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because GlaxoSmithKline provides evidence that holograms having such features are good for security, as they make it very difficult for spurious manufacturers to duplicate them.

***Claim Rejections - 35 USC § 103***

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew (5,521,030), as applied to claims 1, 7, and 13-15 above, in view of Wreede (5,455,692) and Cowan (4,839,250), evidenced by GlaxoSmithKline (ChennaiOnline Cityscape; 2/26/2003; <http://chennaionline.com/cityfeature/newlaunches/crocin.asp>)

McGrew fails to teach the structural properties as in claim 11..

Wreede teaches visual contrast switching effects between the positions (see abstract) upon rotation of the tilted image (See fig. 5B), and tilting of the image at the angle viewed (see figs. 6A and 6B), wherein there are three relief element arrays, one oriented in a row wise grid (see fig. 3), one rotated by 45 degrees on the same plane in a row wise grid (see fig. 40), and the third the combined image of the first two (see abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the shim, as McGrew, to include the structural properties as applicants' limitations in claim 11, because Kato teaches such structural properties are known to be effective, and use of structures known to effective are cost saving.

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The modified teaching of McGrew fails to teach the horizontal axis (rows) are rotated 90 degrees between the two relief element arrays oriented in a row (i.e horizontal) wise grid.

Cowan teaches rotation up to 90 degree can be accomplished between two relief element arrays oriented in a row (i.e. horizontal) wise grid of a hologram (see figs 3 and 4, and col.6, line 35+).

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the shim, as McGrew, to include horizontal axis (rows) are rotated 90 degrees between the two relief element arrays oriented in a row (i. e. horizontal) wise grid as applicants' limitations in claim 11, because Cowan teaches such structural properties are known to be effective, therefore one skilled in the art would be motivated to attempt to use structures known to be effective are cost saving.

Further, it would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of invention of replicating an OVD pattern with etching, as McGrew, by include the use of features like flip-flop, kinetic effect, and 2D as applicants' features in claim 11, because GlaxoSmithKline provides evidence that holograms having such features are good for security, as they make it very difficult for spurious manufacturers to duplicate them.

#### ***Claim Rejections - 35 USC § 103***

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew (5,521,030), as applied to claims 1, 7 and 13-15 above, in view of Wreede (5,455,692),

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Cowan (4,839,250) and

<http://web.archive.org/web/20031001103319/http://hlhologram.com/> (Oct. 1, 2003).

McGrew fails to teach the structural properties as in claim 12.

Wreed teaches visual contrast switching effects between the positions (see abstract) upon rotation of the tilted image (See fig. 5B), and tilting of the image at the angle viewed (see figs. 6A and 6B), wherein there are three relief element arrays, one oriented in a row wise grid (see fig. 3), one rotated by 45 degrees on the same plane in a row wise grid (see fig. 40), and the third the combined image of the first two (see abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the shim, as McGrew, to include the structural properties as applicants' limitations in claim 12, because Kato teaches such structural properties are known to be effective, and use of structures known to effective are cost saving.

The modified teaching of McGrew fails to teach the horizontal axis (rows) are rotated 90 degrees between the two relief element arrays oriented in a row (i.e horizontal) wise grid, as in steps a and d of claim 12.

Cowan teaches rotation up to 90 degree can be accomplished between two relief element arrays oriented in a row (i.e. horizontal) wise grid of a hologram (see figs 3 and 4, and col.6, line 35+).

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the shim, as McGrew, to include horizontal axis (rows)

are rotated 90 degrees between the two relief element arrays oriented in a row (i. e. horizontal) wise grid as applicants' limitations in claim 11, because Cowan teaches such structural properties are known to be effective, therefore one skilled in the art would be motivated to attempt to use structures known to effective are cost saving.

The modified invention of McGrew fails to teach the variety of holographic image pattern relationships as in applicants' steps b-c, as in claim 12.

<http://web.archive.org/web/20031001103319/http://hlhologram.com/> teaches a wide variety of holographic image pattern relationships are know to be effective, including applicants' specifically claimed appears on background or hidden when tilted away, as in steps b – c.

<http://web.archive.org/web/20031001103319/http://hlhologram.com/>.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the shim, as McGrew, to include a wide variety of holographic image pattern relationships known to be effective, including applicants' specifically claimed appears on background or hidden when tilted away, because absent unexpected results, one skilled in the art would be motivated to attempt what has already been taught to be known and effective.

***Claim Rejections - 35 USC § 103***

Claim 16, is rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew (5,521,030), as applied to claims 1, 7, and 13 - 15 above, in view of Blenkhorn (4,840,757).

McGrew fails to teach relief elements are hot-stamped on a substrate of two layers.

Blenkhorn teaches it is known to hot stamp a substrate of two layers. See background.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the transitory image structure, as McGrew, to include relief elements are hot-stamped on a substrate of two layers, because Blenkhorn teaches such a method is well known, one skilled in the art would be motivated to attempt what has already been taught to be known and effective, and use of methods known and effective are cost saving.

***Claim Rejections - 35 USC § 103***

Claim 17, is rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew (5,521,030), as applied to claims 1, 7, and 13 - 15 above, in view of Oshima (6,264,782).

McGrew fails to teach relief elements comprise ink, as in claim 18.

Oshima teaches it is well known for the image transferred (i.e. relief pattern) to contain ink. See Background.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the transitory image structure, as McGrew, to include relief elements contain ink, because Oshima teaches such a method is well known, one skilled in the art would be motivated to attempt what has already been taught to be known and effective, and use of methods known and effective are cost saving.

***Claim Rejections - 35 USC § 103***

Claims 18 and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew (5,521,030), as applied to claims 1, 7, and 13 - 15 above, in view of Gallagher (4,728,377).

McGrew fails to teach images are intaglio printed, as in claim 18.

Gallagher teaches it is well known to for the image transferred to be intaglio printed onto a document (i.e. an object carrying a transitory image structure, as in claim 19). See Section 5-8.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify an object carrying a transitory image structure, as McGrew, to include images are intaglio printed on objects, as in claim 18, because . Gallagher teaches such a method is known to be effective, therefor one skilled in the art would be motivated to attempt what has already been taught, and use of methods known and effective are cost saving.

***Claim Rejections - 35 USC § 103***

Claim 20, is rejected under 35 U.S.C. 103(a) as being unpatentable over McGrew (5,521,030), as applied to claims 1, 7, and 13 - 15 above, in view of Yeo (2002/0001108).

McGrew fails to teach images are injection molded onto the object (i.e. document), as in claim 20.

Yeo teaches it is known for the holographic image to be plastic injection molded onto the document. See Abstract and Summary.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify an object carrying a transitory image structure, as McGrew, to include images are plastic injection molded onto the object (i.e. document) as applicants' claimed limitation, because Yeo teaches such a method is known to be effective, therefor one skilled in the art would be motivated to attempt what has already been taught, and use of methods known and effective are cost saving.

***Conclusion***

Please see MPEP 2113 on Product by process claims. When the reference teaches a product that appears to be the same as, or an obvious variant of, the product set forth in a product-by-process claim although produced by a different process. See *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (Fed. Cir. 1983) and *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985).

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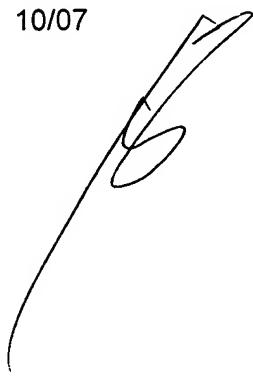
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia A. George whose telephone number is (571) 272-5955. The examiner can normally be reached on Mon. - Fri. between 8:00 am and 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia A George  
Examiner  
Art Unit 1792

PAG 10/07



NADINE NORTON  
SUPERVISORY PATENT EXAMINER  
